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SHORT REPORT

Case Report: A Rare Orientation of Femoral Artery and Vein

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Introduction. *We report the case of a rare orientation of femoral artery and vein in a 51-year-old female patient undergoing routine varicose vein surgery.*
Report. *Intra-operatively, the superficial femoral artery was found to be traversing the sapheno-femoral junction and running* medial *to the common femoral vein.*
Discussion. *This variant has only previously been described once in the literature and in addition to being of general anatomical interest, it serves as a reminder that even the most seemingly constant of vascular landmarks can occasionally be subject to marked variability.*

Keywords: Femoral artery; Femoral vein; Anatomical variant.

Introduction

Embryologically, the initial arterial supply of the lower limb is formed by the axial (or sciatic/ischiadic) artery which arises from the dorsal part of the embryonic umbilical artery and accompanies the sciatic nerve in early embryonic life. By the 14-mm stage in embryonic development, the external iliac has given rise to a femoral artery which communicates with the axial artery distally via a superior communicating artery. The proximal segment of the axial artery persists to form the inferior gluteal while the middle segment disappears leaving the femoral as the principle arterial supply of the leg and foot.

A spectrum of normal variants of vasculature within the femoral triangle has been described,[1,2] comprising largely of variations of the origin and initial course of profunda femoris in addition to variations of the sapheno-femoral junction and its tributaries.

We report the case of a rare orientation of femoral artery and vein within the femoral triangle.

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Case Report

A 51 year old female patient was referred with a long-standing history of symptomatic varicose veins affecting the right lower limb. There was no medical or surgical history of note and no previous history of DVT or trauma. On examination she was found to have varicosities in the distribution of the right small saphenous vein with evidence of early chronic venous insufficiency. Doppler examination revealed a competent sapheno-femoral junction on the right with an incompetent sapheno-popliteal junction.

A subsequent venous duplex of the right lower limb was carried out which confirmed the clinical findings with no evidence of deep venous abnormalities. Two short saphenous vein connections with the popliteal vein were demonstrated along with reflux into a Giacomini vein. A comment of ''pulsatile flow noted in the common femoral vein (?cause)'' was recorded by the vascular scientist performing the scan.

A subsequent venogram was carried out to further delineate the atypical venous anatomy which confirmed the finding of a Giacomini vein which was felt to terminate at a level close to the saphenous opening, most likely draining into the profunda femoris vein. No other aberrant anatomy was suggested by the venogram.

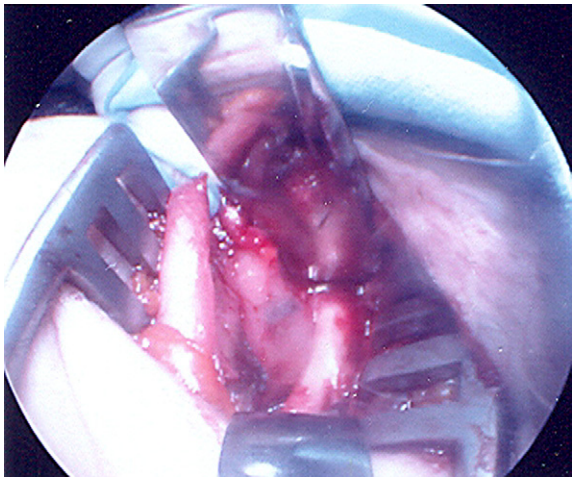

Fig. 1. Intra-operative image (right groin) – the great saphenous vein (GSV) is on a sling and retracted laterally showing the superficial femoral artery (SFA) running medial to the sapheno-femoral junction and common femoral vein.

The patient was taken to theatre for ligation of the duplicated short saphenous vein with high sapheno-femoral ligation, proximal stripping of the great saphenous vein and multiple avulsions. During the groin dissection, the superficial femoral artery was found to be traversing the sapheno-femoral junction and running *medial* to the common femoral vein (Figs. 1 and 2). The remainder of the procedure was completed without incident and the patient made an uncomplicated recovery.

Discussion

To our knowledge, this unusual orientation of femoral vessels has only previously been described once in the literature.[3] Fig. 3 demonstrates the variant vascular anatomy identified in this case. In addition to being of general anatomical interest to the vascular surgeon, it serves as a reminder that even the most seemingly constant of vascular landmarks can occasionally be subject to marked variability.

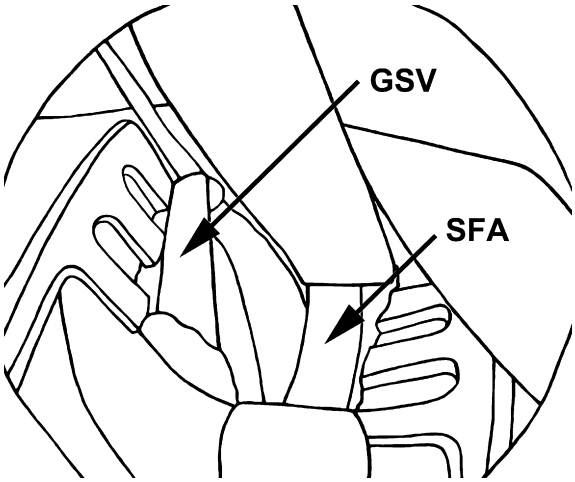

Fig. 2. Outline sketch highlighting anatomy.

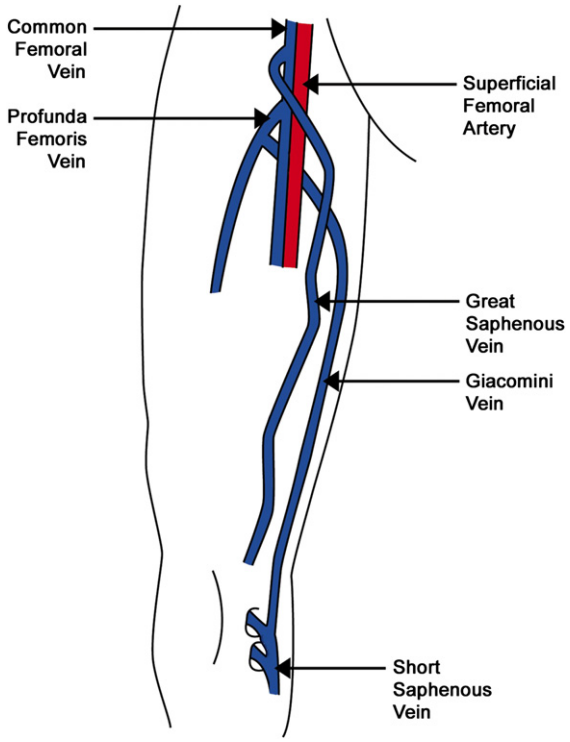

Fig. 3. Overview of variant anatomy.

Acknowledgements

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